

The Occurrence of *Mictocommosis nigromaculata* (Lepidoptera, Tortricidae, Chlidanotinae) in Korea

Yang-Seop BAE

Department of Biology, College of Natural Sciences, University of Incheon, Incheon, 402-749 Korea
E-mail: baeys@lion.incheon.ac.kr

Abstract A chlidanotine moth *Mictocommosis nigromaculata* (Issiki) is recognized from Korea. This is the first record of Chlidanotinae from the Korean Peninsula. Adult and the genitalia of both sexes are redescribed with illustrations.

Key words Lepidoptera, Tortricidae, Chlidanotinae, systematics, new record, Korea

INTRODUCTION

The Tortricidae have been divided into two to four families, but most of recent authors (Tuck, 1981; Horak, 1984; Razowski, 1987) agree that these families are treated as one family. The family are separated into three subfamilies: Tortricinae, Olethreutinae, and Chlidanotinae. The subfamily Chlidanotinae designated by Clarke (1976) and Diakonoff (1977) is mainly distributed in the Southern Hemispheres comprising about 220 species, of them 139 species in the Neotropical region (Powell *et al.*, 1995), and only 16 species in the Palaearctic region. The subfamily is the smallest group divided into three tribes, Chlidanotini, Hilarographini, and Polyorthini. Recently Byun, Bae, and Park (1998) reviewed the Korean Tortricidae, with illustration of adults and both sexes of genitalia. In the book, they enumerated a total of 350 species of Tortricidae: 157 species of 39 genera belong to the subfamily Tortricinae and 193 species of 54 genera of the subfamily Olethreutinae respectively, but no species of the subfamily Chlidanotinae is known from the Korean Peninsula. In 1997, a specimen of Chlidanotinae was collected from Korea for the first time, and the author visited to the Osaka Prefecture University and the Meijo University in Japan to compare it to the types and the related species of the subfamily.

This article is the first one for the Chlidanotinae from Korean Peninsula, with a short note on the subfamily as well as a redescription of *Mictocommosis nigromaculata* with several illustrations. This study was based on the materials collected in Korea and on the collection of Osaka Prefecture University and Meijo University in Japan.

SYSTEMATIC ACCOUNTS

Subfamily Chlidanotinae 얼룩잎말이나방아과 (新稱)

(Fig. 5)

The subfamily can be distinguished from the other subfamilies by a combination of the following characters (Horak and Brown, 1991): 1) forewing without costal fold; 2) hindwing without cubital pecten, with M_2 distant from M_3 at base; 3) male genitalia with a wide vinculum firmly fused to tegumen; 4) valva with intravalval muscles present and at least in some representatives in each tribe with a dorso-longitudinal invagination, containing hair-pencil arising from eighth segment; 5) female genitalia in at least some representatives of each tribe with an accessory bursa arising from near a signum in the shape of bunch of spines. The monophyly of the Chlidanotinae is well demonstrated by unique synapomorphies in the male and female genitalia (Diakonoff, 1977; Tuck 1981). In the adjacent countries, four species in the mainland China (Liu, pers. com.), seven species in Japan (Kawabe, 1982), and three species in Taiwan (Kawabe *et al.*, 1992), were reported, but no species of Chlidanotinae have been previously reported from the Korean Peninsula.

Tribe Hilarographini 얼룩잎말이나방족 (新稱)

Mictocommosis nigromaculata (Issiki) 얼룩잎말이나방 (新稱)

(Figs 1-7)

Simaethis nigromaculata Issiki, 1930: 423 (Choreutidae). Type locality: Japan (Honshu).

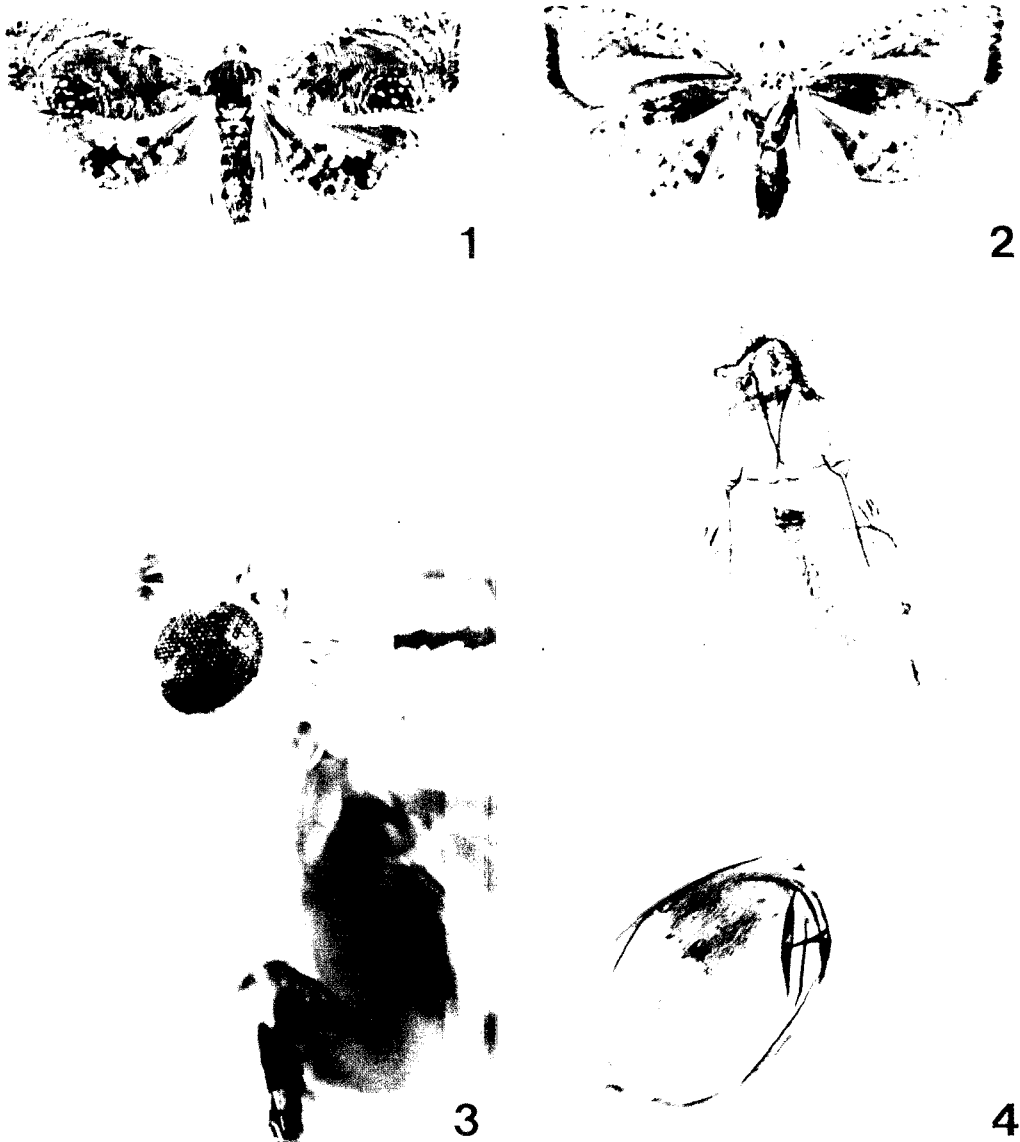
Anthophila takaonis Matsumura, 1931: 1081, no. 2198; Inoue, 1954: 49, no. 239 (Glyphipterygidae), synonymized by Arita (1971). Type locality: Japan (Honshu).

Anthophila nigromaculata: Inoue, 1954: 48; Issiki, 1957: 33, pl. 4, fig. 131; Okano, 1959: 273, pl. 181, no. 5 (Glyphipterygidae).

Mictopsichia nigromaculata: Arita, 1971: 37, figs 1-3 (Glyphipterygidae).

Mictocommosis nigromaculata: Diakonoff, 1977: 9, figs 2, 5, 6, 7; Kawabe, 1982, 1: 150, 2: 181, pl. 227, fig. 30 (Tortricidae).

Adults (Figs 1-3). Wingspan 13-15 mm. Head ochereous; vertex mixed with pale gray scales. Antenna short, about 0.4 times as long as costa of forewing, ochereous mixed with dark grayish scales. Labial palpus pale ochereous, ascending. Thorax deep reddish orange, mixed with fuscous scales, with three longitudinal metallic gray streaks. Abdomen blackish gray, with ochereous tufts. Forewing broad, with straight oblique termen; ground color deep reddish orange, maculated with blackish and grayish tipped scales at middle part; one short and two long metallic gray streaks present near apical third; tornal area with a distinct subtriangular black marking, the outer margin with a metallic gray streak, the inside with two white and four or five orange spots; basal patch with three longitudinal metallic gray streaks, and with



Figs 1-4. *Mictocommosis nigromaculata* (Issiki): 1, adult, dorsal view; 2, adult, ventral view; 3, head, lateral view; 4, female genitalia.

same streak at outer margin. Hindwing dark brownish gray, medially orange; distinct black marking present near tornal area, the outer margin with a broad metallic gray streak. Ventral side of wing orange, maculated with dark grayish, male darker than that of female.

Male genitalia (Fig. 6). Uncus large, spatulate, setose in broadened portion; socius large, oval-clavate, with strong flat trifold setae; gnathos slender, fused distally, bearing transverse rod medially. Transtilla slender, with a distinct process at postero-medially. Vinculum slender, simple. Valva broad, rounded

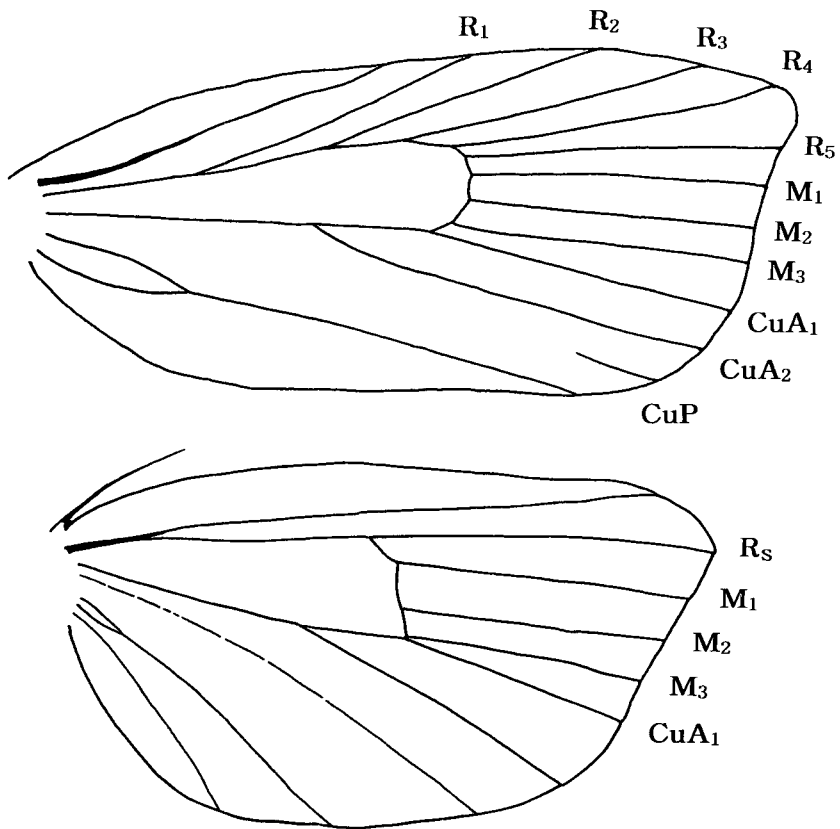


Fig. 5. Wing venation of *Mictocommosis nigromaculata* (Issiki).

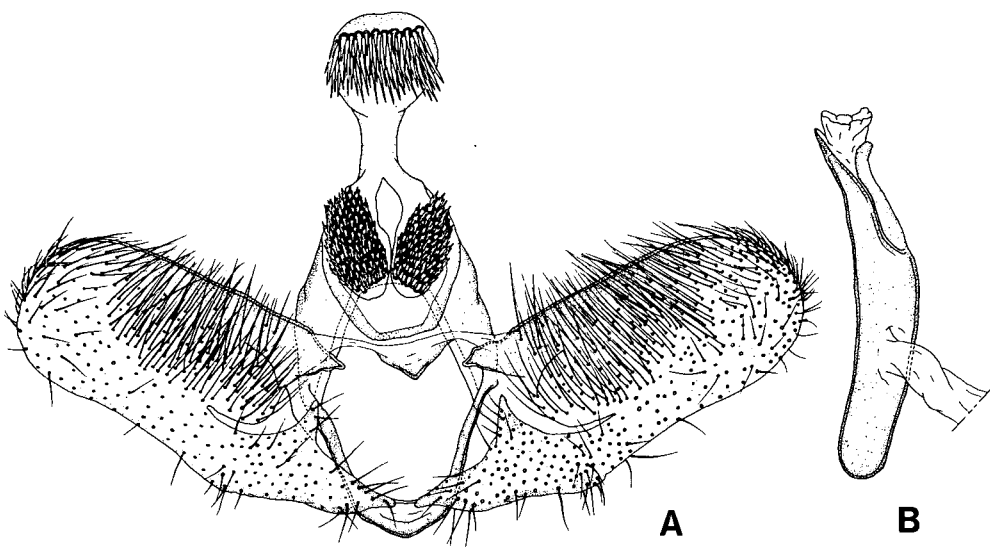


Fig. 6. Male genitalia of *Mictocommosis nigromaculata* (Issiki): (A) ventro-caudal view, removed aedeagus; (B) aedeagus, lateral view.

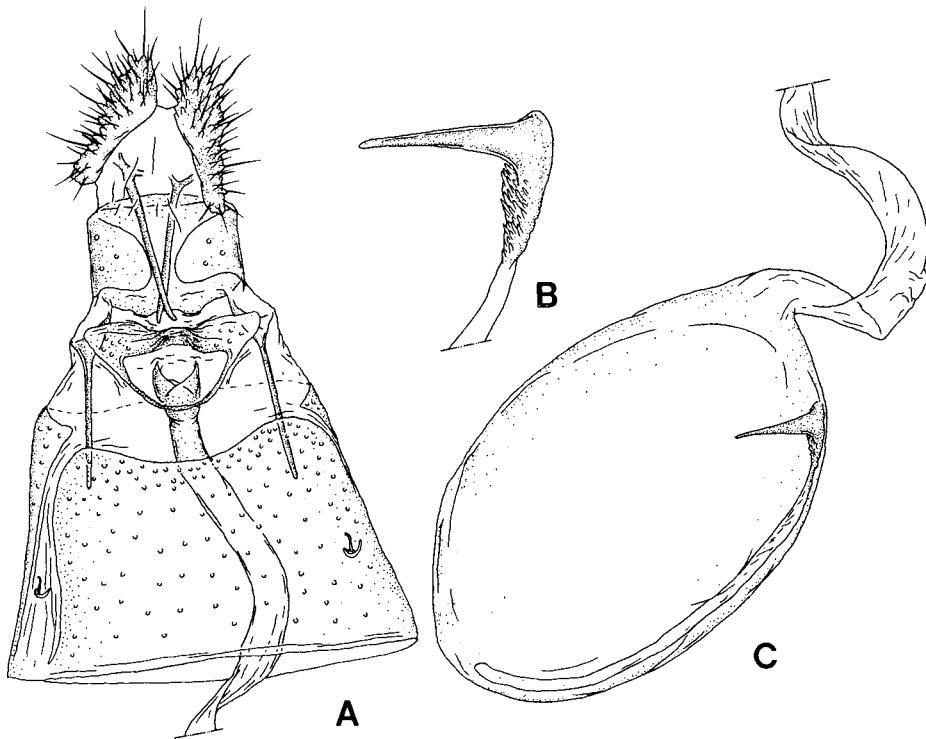


Fig. 7. Female genitalia of *Mictocommosis nigromaculata* (Issiki): (A) Papilla analis to 7th segment; (B) signum; (C) corpus bursae.

apically; costa moderately sclerotized; sacculus broad, bearing triangular dorsal process medially. Aedeagus (Fig. 6A) as long as valva, broad, with pointed apex, and with a sclerotized plate at apical lower part; carina penis well developed; cornuti absent.

Female genitalia (Figs 4, 7). Papilla analis normal tortricid shape. Sterigma moderate in size, plate-like, aciculate sclerite, the upper edge emarginate at middle part, the lower edge with rounded angles, concave at middle. Ductus bursae simple, long, about 1.5 times as long as corpus bursae; colliculum short, round; corpus bursae ovoidal; signum thorn-like, with a dentate basal plate, slender plate extended to reach the bottom of corpus bursae.

Material examined. KOREA: 1 ♀, Mt. Gaya, Yesangun, Chungbuk Province, 15. VI. 1997 (Y.S. Bae, M.K. Paek & B.W. Lee leg.), gen. sl. no. UIB-197, coll. of UIB. JAPAN: 1 ♂, Mt. Koya, Wakayama Prefecture, Honshu, 30. V. 1981 (K. Yasuda), coll. of MUT; genitalia slides det. by Y. Arita— ♂ 19YA, ♂ 93YA, ♀ 26YA, ♀ 157YA, coll. of OPU.

Flight period. June in Korea.

Distribution. Korea (Chungbuk) (new record) and Japan (Honshu, Shikoku, Kyushu).

Host plant. Unknown.

Remarks. This species is similar to *M. stemmatias* (Meyrick) from Indonesia (Celebes) in superficial appearance, but can be distinguished from the latter by distinct blackish marking of hindwing, long corpus

bursae, and unique sterigma of genitalia. This species is recorded from Korea for the first time. It is the type species of the genus *Mictocommosis* erected by Diakonoff (1977). Until now, the genus comprises only two species from Japan and Celebes.

ACKNOWLEDGMENTS

This work was supported by 1998 grant of University of Incheon, Korea. I would like to express my sincerest gratitude to honorary Prof. T. Yasuda and Assoc. Prof. T. Hirowatari of Entomological Laboratory, Osaka Prefecture University, Japan (OPU), for their continuous guidance. My thanks are due to Prof. Y. Arita of Zoological Laboratory, Meijo University, Japan (MUT) for his helpful suggestions and gave me an opportunity to examine the valuable material. My cordial thanks are due to Prof. K.T. Park of Kangweon National University and Dr. B.K. Byun of Forest Museum, National Arboretum. I am also much indebted to Messrs M.K. Paek, B.W. Lee, and N.H. Ahn of Department of Biology, University of Incheon, Korea (UIB) for their assistance in collecting the material.

REFERENCES

- Arita, Y. 1971. The systematic position of *Simaethis nigromaculata* Issiki (Lepidoptera, Glyphipterygidae). *Trans. Shikoku Ent. Soc.* 11: 37-38.
- Byun, B.K., Y.S. Bae and K.T. Park. 1998. In Park, K.T. (ed.), *Insects of Korea 2: Illustrated Catalogue of Tortricidae in Korea* (Lepidoptera). pp. 317.
- Clarke, J.F.G. 1976. Microlepidoptera: Tortricoidea. *Insects Micronesia* 9: 1-144.
- Diakonoff, A. 1977. Description of Hilarographini, a new tribus in the Tortricidae (Lepidoptera). *Ent. Ber. Amst.* 37: 76-77.
- Horak, M. 1984. Assesment of taxonomically significant structures in Tortricidae (Lepidoptera, Tortricidae). *Mitt. schweiz. ent. Ges.* 57: 3-64.
- Horak, M. and R.L. Brown. 1991. Taxonomy and phylogeny. pp. 23-48. In L.P.S. van der Geest and H.H. Evenhuis (eds), *Tortricid Pests*. Elsevier. Amsterdam.
- Inoue, H. 1954. *Check list of the Lepidoptera of Japan* 1: 112 pp. Rikusuisha, Tokyo.
- Issiki, S. 1930. New Japanese and Formosan Microlepidoptera. *Ann. Mag. nat. Hist.* (10) 6: 422-431.
- Issiki, S. 1957. Glyphipterygidae. In T. Esaki et al. (eds), *Icones Heterocerorum Japonicorum in Coloribus Naturalibus* 1: 32-34. Hoikusya, Osaka.
- Kawabe, A. 1982. Tortricidae and Cochylidae. In Inoue et al. (eds), *Moths of Japan* 1: 62-158, 2: 158-183, pls 14-31, 227, 279-295, Kodonasha, Tokyo.
- Kawabe, A., F. Komai and J. Razowski. 1992. Tortricidae. In J.B. Heppner and H. Inoue (eds), *Lepidoptera of Taiwan* 1, Part 2: Checklist: 103-109. Gainesville: Assoc. Trop. Lepid.
- Matsumura, S. 1931. *6000 Illustrations of Insects of the Japan-Empire*. 1527 pp, Shoin, Tokyo.
- Okano, M. 1959. Glyphipterygidae. In H. Inoue et al. (eds), *Iconographia Insectorum Japonicorum colore naturali edita* 1 (Lepidoptera): 273, pl. 181.
- Powell, J.A., J. Razowski, J.W. Brown and R.L. Brown. 1995. Tortricidae. In J.B. Heppner (ed.), *Atlas of Neotropical Lepidoptera. Checklist: Part 2. Hyblaeoidea-Pyraloidea-Tortricoidea*, pp. 138-157. Gainesville: Assoc. Trop. Lepid.

- Razowski, J.W. 1987. The genera of Tortricidae (Lepidoptera). Part I: Palaearctic Chlidanotinae and Tortricinae. *Acta zool. cracov.* 30: 141-355.
- Tuck, K.R. 1981. A new genus of Chlidanotini (Lepidoptera: Tortricidae) from New Caledonia, with a key to genera and check-list of species. *Syst. Ent.* 6: 337-345.

얼룩잎말이나방 (나비목, 잎말이나방과, 얼룩잎말이나방亞科)의 韓國發生

裴 良 燮

仁川大學校 自然科學大學 生物學科

한국산 잎말이나방과는 3개의 亞科중 현재까지 잎말이나방亞科 (Tortricinae), 애기잎말이나방亞科 (Olethreutinae)가 記錄되어 있었으나, 본 研究를 통해서 얼룩잎말이나방亞科 (신칭) (Chlidanotinae)에 속하는 *Mictocommosis nigromaculata* (얼룩잎말이나방) (신칭)를 記錄하여 3亞科 모두가 韓國에서 확인되었다. 본 종의 成蟲寫眞, 翅脈狀 및 암수 生殖器를 포함하여 再記載하였다.

검색어 : 분류, 나비목, 잎말이나방과, 얼룩잎말이나방아과, 한국미기록

(Received: January 29, 2000)

(Accepted: April 25, 2000)